

A large 4.5-year-old urethral meatus calculus with partial phimosis without urinary retention: A case report

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ABSTRACT

In the lower urinary tract, calculi are usually observed in the bladder, prostate, and urethral locations. Here, we present the case of a 40-year-old laborer male patient who presented with complaints of dribbling of urine off and on, suprapubic pain for 1 week, and feeling of stone at the meatus for 4.5 years. X-ray of the pelvis was suggestive of a long slender stone near the urethral meatus. Kidney ureter and bladder ultrasonography suggest no upper tract changes and a large capacity bladder with increased post-void residual. The patient was managed surgically under spinal anesthesia. A meatotomy was done. About 1 cm incision was placed over the ventral aspect extending up to the stone and the stone delivered easily with proximal squeezing. The size of the stone was 2.7 cm × 0.9 cm. Catheter removal was done after 14 days. Large urethral meatus stone is not a common entity and long-time obstructed stone may lead to several complications such as upper tract damage, chronic renal failure, urinary bladder changes, severe urosepsis, and Fournier's gangrene.

Key words: Calculus, Urethral meatus, Urinary tract infection

Calculi are usually observed in the lower urinary tract in the bladder, prostate, and urethral locations. The urethra is an infrequent location, accounting for no more than 0.3% of urinary calculi disease cases [1]. Approximately 88% of urethral stones are localized to the posterior urethra. The frequency of urethral stones varies with geographical location: in Western countries, this disease is diagnosed only occasionally, whereas, it is endemic in the Middle East and Asia. In developing countries, urethral calculi typically consist of struvite and uric acid, whereas, in industrialized societies, calcium oxalate, and cystine stones are dominant [2]. Urethral meatus calculus may be presented as pain, urinary retention, increased frequency of micturition, and dribbling of urine. Chronic urinary retention may lead to upper urinary tract damage and renal failure. Urethral stone may be primary or secondary. Over 90% of these calculi are formed in static urine in urethral anomalies and present early as lower urinary tract symptoms, recurrent urinary tract infections, and penile, groin, or perineal pains [3]. Multiple complications and acute presentation associated with primary urethral calculi are extremely rare in persons without underlying urethral anomalies or comorbidities [4].

CASE REPORT

A 40-year-old laborer male patient presented with complaints of dribbling urine on and off, suprapubic pain for 1 week, and feeling of stone at the meatus for 4.5 years. The patient gives a history of difficulty during sexual intercourse for 4 years and increased frequency of micturition 10–12 times a day. There was no history of diabetes, hypertension, and previous history of surgery and trauma. The patient was an alcoholic and smoker.

On examination, there was a partial phimosis stone seen peeping from the meatus (Fig. 1a). Examination of the scrotum and perineal area was within normal limits.

X-ray of the pelvis was suggestive of a long slender stone near the urethral meatus (Fig. 1b). The kidney ureter and bladder (KUB) ultrasonography suggests no upper tract changes. A large capacity bladder with increased post-void residual was seen. Hemoglobin, white blood cell count, urea, creatinine, and electrolyte levels were within normal limits.

After resuscitation, the patient was managed surgically under spinal anesthesia. Meatotomy was done. About 1 cm incision was placed over the ventral aspect extending up to the stone and the stone was delivered easily holding the artery forceps and proximal squeezing. The size of the stone was 2.7 cm × 0.9 cm. After stone removal, an examination of the stone was done for any broken parts or remaining fragments. Cysto-urethroscopy was done to

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rule out any pathology or stone in the prostatic urethra or the urinary bladder. A 14F Foleys catheter was placed and meatotomy repair was done with 5–0 absorbable suture. For partial phimosis, only dorsal slit operation was done. The patient was discharged on post-operative day 5 after the first dressing (Fig. 2).

Catheter removal was done after 14 days. Urine flow was good and the stitch line was healthy. There was no fistula or stenosis present. Uroflowmetry suggests 21 mL/s. The patient was advised to avoid sexual intercourse for 1 month. The patient resumes sexual function after 1 month with good satisfaction. The patient was advised oral antibiotics for 14 days to remove the risk of urinary tract infection. Upper tract imaging and other investigations were normal after 1 month. The patient was advised to follow-up every 3 months (Fig. 3).

DISCUSSION

A limited number of giant anterior urethral cases with clinical dilemmas have been described in the literature. Urinary calculi are commonly located in the kidneys, ureters, bladder, or posterior urethra which is related to the predominant malformations in these organs with <0.3% located in the anterior urethra [1]. Anterior urethra stones mostly result from urethral pathologies such as strictures, diverticula, hypospadias, severe phimosis, or migration from the proximal urethra [5]. These patients often present with voiding lower urinary symptoms for which diagnosis and treatment are done without clinical problems. In our case report, pathology was the phimosis and the patient neglected it which led to difficulty in passing urine and poor quality of life related to the sex. Even rarer associations have been documented whereby urethral calculi form within the fossa navicularis which is the dilated portion of the male urethra just distal to the narrower cavernous portion [1]. It is also known as the spongy part of the male urethra and lies within the glans area. In our case, the stone involves the fossa of the navicularis and distal urethra.

Open operative approach is the best modality of treatment for very large urethral stones either anterior or posterior. Primary urethral stones form in the urethra and have risk factors such as urethral strictures, diverticula in the urethra, long-duration infection, and urethral foreign bodies. Diagnostic imaging methods in the emergency department for urethral stones include radiography of the abdomen and pelvis or retrograde urethrography [2]. Urethral calculi for pathological analysis can be helpful in identifying the origin of the stone disease. Struvite stones predominate common stones in primary urethral calculi [6]. The most common location of urethral stone is the prostatic urethra. Bothersome voiding or lower urinary tract symptoms is the usual presentation. Urinary retention secondary to urethral meatal stone is extremely rare. Meatotomy under the penile block is reasonably safe and provides prompt relief from symptoms and stone retrieval [7]. Those patients who are able to void with few symptoms and those with urethral diverticulum often seek medical attention late with a long history, often up to many years. Prolonged delays have a more complicated presentation with



Figure 1: (a) Pre-operative photo of the patient; (b) X-ray pelvis

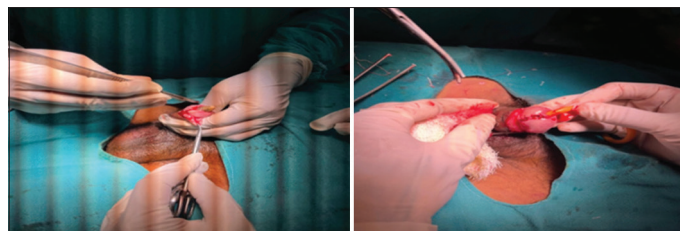


Figure 2: Intraoperative photos of stone removal



Figure 3: Post-operative follow-up after 5 days

larger calculi and urethra-cutaneous or urethra-rectal fistulas [8]. Ultrasound urinary tract or radiography of KUB, or both, are essential to rule out any proximal stones, as the treatment will be either minimally invasive (e.g., shock wave lithotripsy) or involve endoscopic or open surgery [9].

CONCLUSION

Large urethral meatus stone is not a common entity and long-time obstructed stone may lead to several complications such as upper tract damage, chronic renal failure, urinary bladder changes, severe urosepsis, and Fournier's gangrene. Hence, early management is very important. Open surgical exploration and removal with urethral repair is the best modality for the management of large stones. Post-operative recovery and the patient satisfaction level are very good.

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